

Special Issue

Recent Progress in Optical Quantum Information and Communication

Message from the Guest Editors

In recent years, optical quantum technologies have taken a firm step into the spotlight, ushering in breakthroughs across quantum communication, computation, sensing, and networking. In this Special Issue, we explore significant strides in light-source engineering, photonic integration, and nonlinear and linear optics, driving practical applications across:

- Quantum communication: advances in key distribution, entanglement swapping, quantum repeaters, and high-dimensional encoding in fiber, free-space, and underwater channels;
- Quantum networks: milestones such as photonic inter-module entanglement and distributed quantum algorithms;
- Quantum computing and simulation: cutting-edge work in integrated quantum photonics, including chip-based gates and path-/polarization-encoded logic;
- Photonic devices: innovations in photon sources (single- and entangled- photon emitters), high-efficiency detectors (SNSPDs/SPADs), modulators, converters, and memories;
- Quantum sensing/imaging: exploitation of squeezed light, entanglement, and quantum coherence to improve measurement accuracy, resolution, and sensitivity.

Guest Editors

Dr. Morteza Ahmadi

Centre for Quantum Technologies, National University of Singapore, Singapore

Dr. Isa Ahmadalidokht

School of Mathematical and Physical Sciences, University of Technology Sydney, Harris Street, Building 4, Sydney, NSW 2007, Australia

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
photonics@mdpi.com

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Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

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Prof. Dr. Nelson Tansu

School of Electrical and Electronic Engineering (EEE), The University of Adelaide, Adelaide, SA 5005, Australia

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